

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

By this amendment, claims 1 and 4 have been amended. Support for the amendments made to claims 1 and 4 can be found throughout the application including, but not limited to, on page 10, lines 1-7 and 14-18, page 16, lines 4-20 and Figs. 2, 4A-4D, 5A-5C, 8A-8C, 9A and 9B. No claims have been canceled and no new claims have been added to the application. Accordingly, claims 1-4 are pending in the application. No new matter has been added.

In the prior Office Action, the Examiner rejected claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Wycech, U.S. Pat. 4,751,249. In view of the amendments made to claim 1 herein, reconsideration of the rejection of claims 1-3 is respectfully requested.

In Amendment "B", applicant argued that:

Wycech discloses a "precast" insert (see Abstract) that can be placed within a structural member for an automobile and heated. The insert 10 is formed in a mold cavity (see Figs. 2-4). Specifically, pellets 15 formed of a thermosetting polymeric resin and a blowing agent (see col. 4, lines 21-23) are placed into the mold cavity together with unexpanded polystyrene pellets 22 (see col. 5, lines 27-38). The unexpanded polystyrene pellets 22 fill the interstitial spaces between the pellets 15 and the walls of the mold cavity. Steam, heated air or gas is then injected into the mold to cause the polystyrene pellets 22 to expand, forming expanded polystyrene 22', which captures and retains the pellets 15, thereby forming the "precast" insert 10 (see col. 5, lines 42-53). Wycech teaches that the "precast" insert 10 can be placed inside a structural member 12 (see col. 6, lines 55-63). When the structural member 12 is heated, the "precast" insert disposed therein undergoes changes. Specifically, the expanded polystyrene 22'

vaporizes and the pellets 15 expand and bond to themselves and to the inner walls of the structural member (see col. 7, lines 25-54).

The process disclosed in Wycech produces a structural member that is significantly different than claimed in claim 1. Claim 1, as amended, claims a skeleton structural member comprising a hollow skeleton member and multiple granules packed inside the skeleton member and/or a space bounded by the skeleton member and a panel member peripheral to the skeleton member, "wherein the multiple granules are contained in a closed space bounded at least in part by an expanded partition wall member provided inside the skeleton member and/or space" (underlined emphasis added). There is no expanded partition wall member in the structural member according to Wycech. The expanded polystyrene 22' in the "precast" insert according to Wycech degrades "to a thin film or soot" (see col. 7, lines 31-33) when the structural member is heated, leaving only the expanded pellets 15 behind. Thus the expanded pellets 15 in the structural member according to Wycech are not contained in a closed space bounded at least in part by an expanded partition wall member as required by claim 1. Applicant's skeleton structural member as claimed in claim 1 is clearly not anticipated by Wycech.

In the prior Office Action, the Examiner responded that:

Applicant's arguments are unpersuasive because the broadest definition of the term "wall" is a material layer that encloses a space. Since the expanded polystyrene of Wycech encloses the pellets (i.e. spaces), the expanded polystyrene can be considered an expanded partition wall member. Further, the fact that the process of Wycech ultimately results in vaporization of the polystyrene does not change the fact that at some point in the process of Wycech, a skeleton structure member with multiple granules contained in a closed space bounded by an expanded partition wall member exists and is disclosed.

In order to address the Examiner's response and to further distinguish Wycech, applicant has amended claim 1 to specify that the multiple granules are packed inside a chamber partially bounded by (i) the hollow skeleton member or (ii) the hollow skeleton member and a panel member peripheral to the hollow skeleton member, and that the multiple granules are contained in a pressurized closed space bounded at least in part by at least one expanded partition wall member provided

inside the chamber, the expanded partition wall member forming a partition within the chamber between the pressurized closed space containing the plurality of granules and a space section within the chamber wherein no granules are present. As noted above, this is clearly described in the specification at page 10, lines 1-7 and 14-18, page 16, lines 4-20 and depicted in Figs. 2, 4A-4D, 5A-5C, 8A-8C, 9A and 9B. The specification teaches that the pressurized close space containing the plurality of granules pushes on the vertical wall parts (11a) of the skeleton member (11) thereby resisting deformation of the skeleton member (11) when a load is placed thereon. See page 10, lines 18-24.

Wycech clearly does not disclose a skeleton structural member having the structure as claimed in claim 1. Before the skeleton structural member according to Wycech is heated, there is no expanded partition wall member that forms a partition within the chamber between a pressurized closed space containing a plurality of granules and a space section within the chamber wherein no granules are present. Before heating, the granules are simply dispersed within a precast matrix of expanded polystyrene that is positioned in an unpressurized state within the skeleton member. Furthermore, after the skeleton structural member according to Wycech is heated, the expanded polystyrene of the precast insert taught by Wycech vaporizes, leaving no expanded partition wall member that forms a partition within the chamber between a pressurized closed space containing a plurality of granules and a space section within the chamber wherein no granules are present. Thus, Wycech clearly does not read on claim 1, as amended. Reconsideration is thus respectfully requested.

Also in the prior Office Action, the Examiner rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Wycech in view of Bock et al. The Examiner contends that Wycech discloses a method for manufacturing a skeleton structural member as claimed, except that Wycech does not disclose disposing the partition wall forming members apart from each other. The Examiner contends that it would have been obvious to dispose partition wall forming members apart from each other in view of Bock et al., U.S. 2003/0057737. Applicant respectfully disagrees.

In Amendment "B", applicant argued that:

Bock et al. teaches that "segments" can be placed within structural members of automobiles to reinforce the structural members. Bock et al. teaches that each of the "segments" is "composed of a polymeric material such as nylon, an injection molded nylon carrier, an injection molded polymer, graphite, carbon or a molded metal" (see [0011]) that is at least partially coated with a bonding material that preferably comprises a heat-activated structural foam, which expands and cures upon heating (see [0031]). Neither Wycech nor Bock et al. fairly teaches a method for manufacturing a skeleton structural member that comprises the steps of disposing a vessel or a bag containing a plurality of spaced apart partition wall forming members and multiple granules inside the skeleton member and/or space and heating the skeleton member with the vessel or the bag containing the plurality of partition wall forming members and multiple granules disposed inside the skeleton member and/or space as claimed in claim 4. Accordingly, the rejection of claim 4 should be withdrawn.

In the prior Office Action, the Examiner responded that:

Applicant's argument is unpersuasive. For more clarity, examiner directs applicant's attention to C6/55-60 of Wycech which discloses loading the insert into structural member comprising a shell or other fame member. It is the examiner's position that the shell can be considered a vessel disposed inside the structural member. Therefore, modified Wycech discloses a method comprising the steps of disposing a vessel containing a plurality of spaced apart partition wall members and multiple granules inside the skeleton member and heating the skeleton member with the vessel containing the plurality of

partition wall forming members and multiple granules disposed inside the skeleton member.

Applicant respectfully disagrees with the Examiner's characterization of Wycech insofar as the Examiner contends that the "shell" can be considered a "vessel" containing a plurality of partition wall forming members and multiple granules, which is disposed inside the skeleton member and/or space as claimed in claim 4. With regard to the "shell" referenced by the Examiner, Wycech teaches at col. 6, lines 55-60 that:

The second phase of the process, comprising the method of using the precast composite plastic insert 10 to reinforce a structural member, begins with the step of loading the precast composite plastic insert 10 into a structural member 12 comprising a shell or other frame member having a concave region for receiving the precast composite plastic insert 10. The structural member 12 preferably includes a cover 30 or shell closure member which partially encloses the insert 10.

Thus, the term "shell" referenced in Wycech is a clearly component of the structural member. It is not an object (e.g., a vessel) that is disposed inside a structural member, and which contains a plurality of partition wall forming members and multiple granules disposed therebetween as claimed.

Furthermore, the amendments made to claim 4 further distinguish the invention from the prior art. Claim 4 now includes the same limitations as amended claim 1, namely that the multiple granules are packed inside a chamber partially bounded by (i) the hollow skeleton member or (ii) the hollow skeleton member and a panel member peripheral to the hollow skeleton member, and that the multiple granules are contained in a pressurized closed space bounded at least in part by at least one expanded partition wall member provided inside the chamber, the

expanded partition wall member forming a partition within the chamber between the pressurized closed space containing the plurality of granules and a space section within the chamber wherein no granules are present. Neither Wycech nor Bock et al. teach a method of forming a skeleton structural member as claimed in claim 4. Wycech teaches a precast plastic insert that includes an expanded polystyrene component that vaporizes upon heating. Bock et al. does not teach granules. Thus, a person having ordinary skill in the art would not have found applicant's invention as claimed in claim 4 obvious in view of Wycech and Bock et al.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-16349.

Respectfully submitted,

RANKIN, HILL & CLARK LLP

By: /Randolph E. Digges, III/
Randolph E. Digges, III, Reg. No. 40590

38210 Glenn Avenue
Willoughby, Ohio 44094-7808
(216) 566-9700